**Amendments to the Claims:**

Claims 1 – 14 are pending in this application.

Claims 1 – 14 are being cancelled.

New Claims 15-42 are being added.

Please amend the claims as follows:

1 – 14. Cancel

15. (New) A gamma correction circuit, comprising:

input circuitry responsive to an input data value for generating first and second preliminary values based on data selected from first and second correction curves;

gain generation circuitry responsive to a gamma value for generating first and second gain values from first and second gamma gain functions; and

output circuitry for combining the first and second preliminary values and the first and second gain values to generate a corrected output value.

16. (New) The gamma correction circuit of Claim 15 wherein the input circuitry is operable to generate the first and second preliminary values by selecting from among a plurality of correction values based on data selected from a plurality of correlation curves.

17. (New) The gamma correction current of Claim 15, wherein the gain generation circuitry is operable to generate the first and second gain values by selecting from among a plurality of gain values based on data selected from a plurality of gamma gain functions.

18. (New) The gamma correction circuit of Claim 15, wherein the output circuitry comprises:

a first multiplier for calculating a first product from the first preliminary value and the first gain value;

a second multiplier for calculating a second product from the second preliminary value and a second gain value; and

an adder for adding the first and second products to generate a corrected output value.

19. (New) The gamma correction circuit of Claim 15, further comprising at least one table for storing the first and second stored correction curves.

20. (New) The gamma correction circuit of Claim 15, further comprising at least one table for storing the first and second gain values and circuitry for selectively accessing the first and second gain values in response to the desired gamma function.

21. (New) The gamma correction circuit of Claim 15, wherein the data value comprises a luma value.

22. (New) A method of correcting a data value given a gamma value, comprising:

in response to an input data value to be corrected, generating first and second preliminary values based on data selected from the first and second correction curves;

in response to a desired gamma value, generating first and second gain values from gamma gain functions; and

combining the first and second preliminary values and the first and second gain values to generate a corrected output value.

23. (New) The method of Claim 22, wherein generating first and second preliminary values comprises selecting first and second preliminary values by selecting from among a plurality of correction values based on data selected from a plurality of correction curves.

24. (New) The method of Claim 22, wherein generating first and second gain values comprises selecting first and second gain values based on data selected from a plurality of gamma gain functions.

25. (New) The method of Claim 15, wherein combining the first and second preliminary values and the first and second gain values comprises:

calculating a first product from the first preliminary value and the first gain value;

calculating a first product from the second preliminary value and a second gain value; and

adding the first and second products to generate a corrected output value.

26. (New) The method of Claim 15, wherein generating first and second preliminary values comprises selecting first and second preliminary values from first and second stored correction curves.

27. (New) The method of Claim 16, wherein the first and second stored correction curves are selected from first and second tables.

28. (New) The method of Claim 15, wherein generating first and second gain values comprises selecting first and second gain values from a table.

29. (New) The method of Claim 15, wherein the data value comprises a luma value.

30. (New) A method of generating a correction value for performing gamma correction on a received value, comprising:

generating first and second gamma functions;

generating first and second gain values; and

generating a correction value by combining the first and second gamma functions and the first and second gain values.

31. (New) The method of Claim 30, wherein generating the first and second gamma functions comprises generating first and second gamma functions in response to a received value for correction.

32. (New) The method of Claim 30, wherein generating the first and second gain values comprises generating first and second gain values in response to a desired gamma input.

33. (New) The method of Claim 30, wherein generating first and second gamma functions comprises generating first and second gamma curves corresponding to first and second selected gamma values.

34. (New) The method of Claim 31, further comprising storing the first and second gamma curves in at least one table.

35. (New) The method of Claim 30, wherein generating first and second gain values comprises generating first and second cross – correlation values.

36. (New) The method of Claim 30, wherein generating first and second gamma functions comprises generating a plurality of selectable gamma functions including the first and second gamma functions.

37. (New) The method of Claim 35, further comprising storing the first and second gain values in at least one table.

38. (New) The method of Claim 30, wherein generating a correction value by combining the first and second gamma functions and the first and second gain values comprises:

multiplying the first gain value and the first gamma function to generate a first product;

multiplying the second gain value and the second gamma function to generate a second product; and

summing the first and second products to generate the correction value.

39. (New) A method of performing gamma correction on a received value comprising:

receiving an input value for gamma correction and an input gamma value;

combining a plurality of gamma values selected in response to the input gamma value and plurality of gain values selected in response to the input value for gamma correction to generate a gamma corrected output value.

40. (New) The method of Claim 39, wherein combining a plurality of gamma values and a plurality of gain values comprises:

selecting at least two gamma values from corresponding gamma correction curves;

selecting at least two gain values from a plurality of gain values; and

combining a first gamma value and a first gain value and a second gamma value and a second gain value to generate the gamma corrected output value.

41. (New) The method of Claim 39, wherein the received value for gamma correction comprises video data.

42. (New) The method of Claim 41, wherein the video data comprises luma data.